Intergovernmental Data Quality Task Force

Workbook
Uniform Federal Policy for Quality Assurance Project Plans

IDQTF, QAPP Workbook

Draft
Version 2
June 2001

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UNIFORM FEDERAL POLICY FOR QUALITY ASSURANCE PROJECT PLANS WORKSHEET WORKBOOK

INTRODUCTION

This *Uniform Federal Policy for Quality Assurance Project Plans Worksheet Workbook (Workbook)* is a companion document to the *Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP Manual)*. It provides examples of worksheets to assist with the preparation of QAPPs in accordance with *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs*, ANSI/ASQC E4 (Final, January 1995). This Workbook may be used by Lead Organizations and their contractors to assist with the preparation of QAPPs for environmental data gathering activities.

Each worksheet addresses specific requirements of the Manual. Like the Manual, the Workbook is intended to be comprehensive and is not intended to be program-specific. Since the content and level of detail in a specific QAPP will vary by program, the work being performed, and the intended use of the data, specific worksheets may not be applicable to all projects.

The ultimate success of an environmental program or project depends on the quality of the environmental data collected and used in decision-making, and this may depend significantly on the adequacy of the QAPP and its effective implementation. It is recommended that the individual worksheets included in this Workbook be taken to the project scoping and planning meetings. The use of the worksheets will aid in identifying the critical project information that will ensure that the right type, quality, and quantity of data are collected to meet all of the project's quality objectives. Though the format of each worksheet is not mandatory, the information outlined in the worksheet "headers" must be provided if applicable to the project.

QAPP Worksheet #1
Title and Approval Page

Site Name/Project Name:
Site Location:

Title:
Revision Number:
Revision Date:
Page_____ of _____

_____
Document Title

_____
Lead Organization (Agency, State, Tribe, Federal Facility, PRP, or Grantee)

_____
Preparer's Name and Organizational Affiliation

_____
Preparer's Address and Telephone Number

_____
Preparation Date (Day/Month/Year)

Investigative Organization's Project Manager:_____
Signature

_____
Printed Name/Organization/Date

Investigative Organization's Project QA Officer: _____
Signature

_____
Printed Name/Organization/Date

Lead Organization's Project Officer :_____
Signature

_____
Printed Name/Organization/Date

Approval Signatures: _____
Signature

_____
Printed Name/Title/Date

_____
Approval Authority

Other Approval Signatures: _____
Signature

_____
Printed Name/Title/Date

Document Control Number:
_____

QAPP Worksheet #2
QAPP Identifying Information

Site Name/Project Name:
Site Location:
Site Number/Code:
Operable Unit:
Contractor Name:
Contractor Number:
Contract Title:
Work Assignment Number:

Title:
Revision Number:
Revision Date:
Page_____ of _____

1. Identify guidance used to prepare QAPP:
   _____
2. Identify program: _____
3. Identify approval entity: _____
4. Indicate whether the QAPP is a generic program QAPP or a project-specific QAPP. (circle one)
5. List dates of scoping meetings that were held:_____
6. List dates and titles of QAPP documents written for previous site work, if applicable:

Title	Approval Date
_____	_____
_____	_____
_____	_____
_____	_____

7. List organizational partners (stakeholders) and connection with Lead Organization:
   _____
   _____
8. List data users:_____
   _____
   _____
9. If any required QAPP elements (1- 20), worksheets and/or required information are not applicable to the project, then circle the omitted QAPP Elements, Worksheets and Required Information on the attached Table. Provide an explanation for their exclusion below:
   _____
   _____
   _____
   _____

QAPP Identifying Information (continued)

Circle QAPP elements and required information that are not applicable to the project. Provide an explanation in this section of the QAPP.

REQUIRED QAPP ELEMENT(S) AND CORRESPONDING QAPP SECTION(S)	REQUIRED INFORMATION
Project Management and Objectives	
2.1 Title and Approval Page	- Title and Approval Page
2.2 Table of Contents and Document Format 2.2.1 Table of Contents 2.2.2 Document Control Format 2.2.3 Document Control Numbering System 2.2.4 QAPP Identifying Information	- Table of Contents - QAPP Identifying Information
2.3 Distribution List and Project Personnel Sign-Off Sheet	- Distribution List - Project Personnel Sign-Off Sheet
2.4 Project Organization 2.4.1 Project Organizational Chart 2.4.2 Communication Pathways 2.4.2.1 Modifications to Approved QAPP 2.4.3 Personnel Responsibilities and Qualifications 2.4.4 Special Training Requirements/Certification	- Organizational Chart - Communication Pathways - Personnel Responsibilities and Qualifications Table - Special Personnel Training Requirements Table
2.5 Project Planning/Problem Definition 2.5.1 Project Planning Meetings 2.5.2 Problem Definition/Site History and Background	- Project Planning Meeting Documentation - Project Scoping Meeting Attendance Sheet with Agenda - Problem Definition/Site History and Background - Site Maps (historical and present)
2.6 Project Description and Schedule 2.6.1 Project Overview 2.6.2 Project Schedule	- Project Description - Contaminants of Concern and Other Target Analytes Table - Field Quality Control Sample Summary Table - Analytical Services Table - System Designs - Project Schedule Timeline Table
2.7 Project Quality Objectives and Measurement Performance Criteria 2.7.1 Project Quality Objectives 2.7.2 Measurement Performance Criteria	- Measurement Performance Criteria Table

QAPP Identifying Information (continued)

REQUIRED QAPP ELEMENT(S) AND CORRESPONDING QAPP SECTION(S)	REQUIRED INFORMATION
Measurement/Data Acquisition	
3.1.1 Sampling Process Design 3.1.1.1 Sampling Design Rationale	- Sampling Design and Rationale - Sampling Locations, Sampling and Analysis Methods/SOP Requirements Table - Sample Location Map
3.1.2 Sampling Procedures and Requirements 3.1.2.1 Sampling Procedures 3.1.2.2 Sampling SOP Modifications 3.1.2.3 Cleaning and Decontamination of Equipment/Sample Containers 3.1.2.4 Field Equipment Calibration 3.1.2.5 Field Equipment Maintenance, Testing, and Inspection Requirements 3.1.2.6 Inspection and Acceptance Requirements for Supplies/Sample Containers	- Sampling SOPs - Project Sampling SOP Reference Table - Sampling Container, Volumes, and Preservation Table - Field Sampling Equipment Calibration Table - Cleaning and Decontamination SOPs - Field Equipment Maintenance, Testing, and Inspection Table
3.1.3 Sample Handling, Tracking, and Custody Requirements 3.1.3.1 Sample Collection Documentation 3.1.3.1.1 Field Notes 3.1.3.1.2 Field Documentation Management System 3.1.3.2 Sample Handling and Tracking System 3.1.3.3 Sample Custody	- Sample Handling, Tracking and Custody SOPs - Sample Handling Flow Diagram - Sample Container Label (Sample Tag) - Chain-of-Custody Form and Seal
3.2.1 Field Analytical Method Requirements 3.2.1.1 Field Analytical Methods and SOPs 3.2.1.2 Field Analytical Method/SOP Modifications 3.2.1.3 Field Analytical Instrument Calibration 3.2.1.4 Field Analytical Instrument/ Equipment Maintenance, Testing, and Inspection Requirements 3.2.1.5 Field Analytical Inspection and Acceptance Requirements for Supplies	- Field Analytical Methods/SOPs - Field Analytical Method/SOP Reference Table - Field Analytical Instrument Calibration Table - Field Analytical Instrument/Equipment Maintenance, Testing, and Inspection Table

QAPP Identifying Information (continued)

REQUIRED QAPP ELEMENT(S) AND CORRESPONDING QAPP SECTION(S)	REQUIRED INFORMATION
3.2.2 Fixed Laboratory Analytical Method Requirements 3.2.2.1 Fixed Laboratory Analytical Methods and SOPs 3.2.2.2 Fixed Laboratory Analytical Method/SOP Modifications 3.2.2.3 Fixed Laboratory Instrument Calibration 3.2.2.4 Fixed Laboratory Instrument/ Equipment Maintenance, Testing, and Inspection Requirements 3.2.2.5 Fixed Laboratory Inspection and Acceptance Requirements for Supplies	- Fixed Laboratory Analytical Methods/SOPs - Fixed Laboratory Analytical Method/SOP Reference Table - Fixed Laboratory Instrument Maintenance and Calibration Table
3.3.1 Quality Control Requirements 3.3.1.1 Sampling Quality Control 3.3.1.2 Analytical Quality Control 3.3.1.2.1 Field Analytical QC 3.3.1.2.2 Fixed Laboratory QC	**Sampling** - Field Sampling QC Table - Field Sampling SOP Precision and Accuracy Table **Analytical** - Field Analytical QC Sample Table - Field Analytical Method/SOP Precision and Accuracy Table - Field Screening/Confirmatory Analysis Decision Tree - Fixed Laboratory Analytical QC Sample Table - Fixed Laboratory Method/SOP Precision and Accuracy Table
3.4.1 Data Acquisition Requirements	- Non-Direct Measurements Criteria and Limitations Table
3.5.1 Documentation, Records, and Data Management 3.5.1.1 Project Documentation and Records 3.5.1.2 Field Analysis Data Package Deliverables 3.5.1.3 Fixed Laboratory Data Package Deliverables 3.5.1.4 Data Reporting Formats 3.5.1.5 Data Handling and Management 3.5.1.6 Data Tracking and Control	- Project Documents and Records Table - Data Management SOPs

QAPP Identifying Information (continued)

REQUIRED QAPP ELEMENT(S) AND CORRESPONDING QAPP SECTION(S)	REQUIRED INFORMATION
Assessment/Oversight	
4.1 Assessments and Response Actions 4.1.1 Planned Assessments 4.1.2 Assessment Findings and Corrective Action Responses 4.1.3 Additional QAPP Nonconformances	- Assessment and Response Actions - Project Assessment Table - Audit Checklists
4.2 QA Management Reports	- QA Management Reports Table
Data Verification/Validation and Usability	
5.1 Verification and Validation Requirements and Procedures	- Data Verification/Validation Process Table - Data Verification/Validation Summary Table
5.2 Data Usability/Reconciliation with Data Quality Objectives	- Data Usability Assessment

Note: All QAPP Worksheets, when used, should be completed with project-specific information. If the QAPP Worksheets are not used, the information the worksheets require must still be presented in the QAPP. In addition, other project-specific information should be provided in tabular format, as much as practicable. However, sufficient written discussion in text format should accompany these tables. Certain sections, by their nature, will require more written discussion than others. In particular, Section 3.1.1 should provide an in-depth explanation of the sampling design rationale and Sections 5.1 and 5.2 should describe the procedures and criteria that will be used to verify, validate, and assess data usability.

QAPP Worksheet #3
List people who will receive the approved QAPP, QAPP revisions, addenda, and/or amendments.

Title:
Revision Number:
Revision Date:
Page ____ of ____

Distribution List

QAPP Recipients	Title	Organization	Telephone Number	Document Control Number

QAPP Worksheet #4
Copies of this form must be signed by project personnel from each organization to indicate that they have read the QAPP and will implement the QAPP as prescribed. Each organization should forward signed sheets to the central project file.

Title:
Revision Number:
Revision Date:
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Project Personnel Sign-Off Sheet

Organization:_____

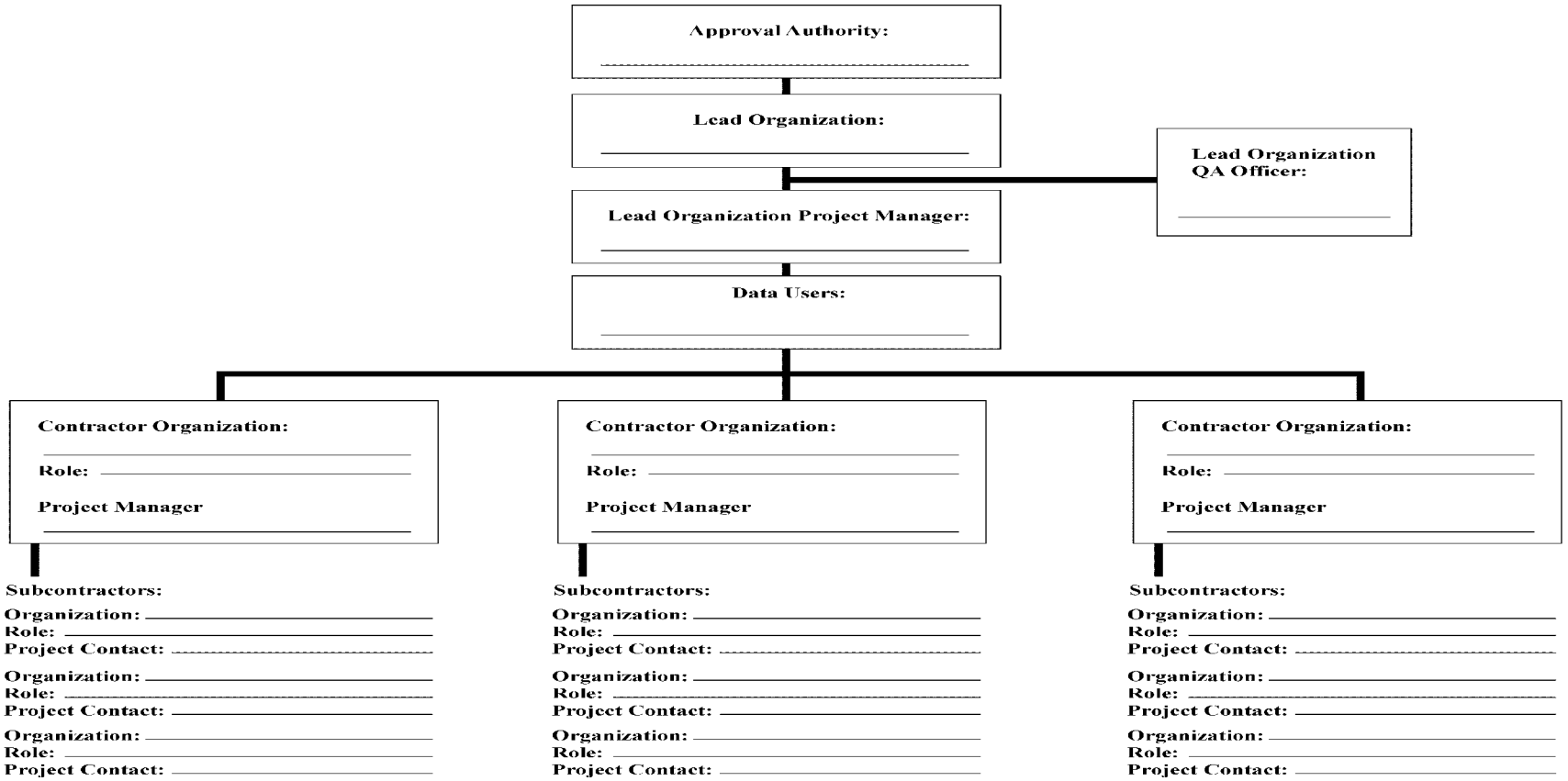
Title	Telephone Number	Signature	Date QAPP Read	QAPP Acceptable as Written

QAPP Worksheet #5

Identify reporting relationships between Lead Organization and other organizations, including contractors and subcontractors. Include the name and phone number of each organization and the Project Manager, Case Team member, and/or Project Contacts for each organization. (Refer to *QAPP Manual* Section 2.4.1 for guidance.)

Title:
Revision Number:
Revision Date:
Page _____ of _____

Organizational Chart



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QAPP Worksheet #6

Identify project personnel associated with each organization, contractor, and subcontractor participating in responsible project functions. Include their title, the name of organization for whom they work, and their project responsibilities. Indicate Project Team members with an "*". Attach resumes to this worksheet. (Refer to *QAPP Manual* Section 2.4.3 for guidance.)

Title:
Revision Number:
Revision Date:
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Personnel Responsibilities and Qualifications Table

Name	Title	Organizational Affiliation	Responsibilities	Education and Experience Qualifications

QAPP Worksheet #7
Provide the following information for those projects requiring specialized training. Attach training records and/or certificates to this worksheet.
(Refer to *QAPP Manual* Section 2.4.4 for guidance.)

Title:
Revision Number:
Revision Date:
Page ____ of ____

Special Personnel Training Requirements Table

Project Function	Specialized Training – Title of Course or Description	Training Provided By	Training Date	Personnel/Groups Receiving Training	Personnel Titles/ Organizational Affiliation	Location of Training Records/Certificates*

*If training records and/or certificates are on file elsewhere, document their location in this column. If training records and/or certificates do not exist or are not available, then this should be noted.

QAPP Worksheet #8
Complete this worksheet for each project scoping meeting held. Attach meeting agenda and notes. (Refer to *QAPP Manual* Section 2.5.1 for guidance.)

Title:
Revision Number:
Revision Date:
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Project Scoping Meeting Attendance Sheet

EPA Regulation Program: RCRA FIFRA TSCA CERCLA DW CWA CAA **Program: Brownfields, NPDES, etc._____** **Projected Date(s) of Sampling_____** **Project Manager_____**	**Site Name_____** **Site Location_____** **CERCLA Site/Spill Identifier No. 01_____** **Operable Unit_____** **Other Site Number/Code_____** **Phase: ERA SA/SI pre-RI RI (phase I, etc.) FS RD RA post-RA (circle one)** **Other phase:_____**

Date of Meeting:
Meeting Location:

Name	Title	Affiliation	Phone #	Project Role

Meeting Purpose:_____
_____

Comments:_____
_____
_____

QAPP Worksheet #9a
Provide a brief overview of project activities, including contaminants of concern, sampling tasks, system designs, analytical tasks, data verification and validation tasks, quality control activities, quality assurance assessments, data usability assessments, and records and reports. (Refer to *QAPP Manual* Section 2.6.1 for guidance.)

Project Description

QAPP Worksheet #9b
Complete separate tables for each medium/matrix, analytical parameter, and concentration level. List the analyte name and CAS numbers of all Contaminants of Concern (COCs) and other target analytes that will be measured for the project. Identify the COCs with an "*". Identify the Project Quantitation Limits required to meet project objectives, i.e., known regulatory or technical Project Action Limits for each analyte. List the MDLs and QLs of the published method and the MDLs and QLs achievable by the laboratory. Ensure that the achievable laboratory quantitation limits are less than or equal to the Project Quantitation Limits and that Project Quantitation Limits are at least two to five times less than the Project Action Limits. (Refer to *QAPP Manual* Section 2.6.1 for guidance.)

Title:
Revision Number:
Revision Date:
Page ____ of ____

Medium/Matrix:
Matrix Code (from DQO Summary Form):
Analytical Parameter:
Concentration Level:
Field Analytical or Fixed Laboratory Method/SOP[1]:

Contaminants of Concern and Other Target Analytes Table (Reference Limit and Evaluation Table)

Analyte	CAS Number	Project Action Limit (Units) (wet or dry weight)	Project Quantitation Limit (Units) (wet or dry weight)	Analytical Method		Achievable Laboratory Limits	
				MDLs[1]	Method QLs[1]	MDLs[2]	QLs[2]

[1]Analytical method MDLs and QLs documented in validated methods. QLs are usually 3-10 times higher than the MDLs.
[2]Achievable MDLs and QLs are limits that an individual laboratory can achieve when performing a specific analytical method.

QAPP Worksheet #9c
Summarize by matrix the number of field and QC samples that will be collected for each analytical parameter and concentration level. (Refer to *QAPP Manual* Section 2.6.1 for guidance.)

Title:
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Revision Date:
Page ____ of ____

Field Quality Control Sample Summary Table

Medium/ Matrix	Analytical Parameter	Concentration Level	Analytical Method/ SOP Reference	No. of Sampling Locations[1]	No. of Field Duplicate Pairs	Organic		Inorganic		No. of VOA Trip Blanks	No. of Bottle Blanks	No. of Equip. Blanks	No. of Cooler Temp. Blanks	No. of PE Samples	Total No. of Samples to Lab
						No. of MS	No. of MSD	No. of Duplicates	No. of Spikes						

[1]**If samples will be collected at different depths at the same location, count each discrete sampling depth as a separate sampling location/station.**

QAPP Worksheet #9d
Complete this worksheet for each medium/matrix, analytical parameter, and concentration level. Identify all laboratories/organizations that will provide analytical services for the project, including field screening, field analytical, and fixed laboratory analytical work. If applicable, identify the backup laboratory/organization that will be used if the primary laboratory/organization cannot be used. (Refer to *QAPP Manual* Sections 2.6.1, 3.2.1 and 3.2.2 for guidance.)

Analytical Services Table

Medium/ Matrix	Analytical Parameter	Concentration Level	Analytical Method/SOP	Data Package Turnaround Time	Laboratory/Organization (Name and Address: Contact Person and Telephone Number)	Backup Laboratory/Organization (Name and Address: Contact Person and Telephone Number)

QAPP Worksheet #10
List project activities and anticipated start and completion dates. Identify all products and/or deliverables as outcomes of project activities and the anticipated dates of delivery. (Refer to *QAPP Manual* Section 2.6.2 for guidance.)

Title:
Revision Number:
Revision Date:
Page ____ of ____

Project Schedule Timeline Table

Activities	Dates (MM/DD/YY)		Deliverable	Deliverable Due Date
	Anticipated Date(s) of Initiation	Anticipated Date of Completion		

QAPP Worksheet #11

Complete this worksheet for each medium/matrix, analytical parameter and concentration level. Identify the DQI, measurement performance criteria, and QC sample and/or activity used to assess the measurement performance for the sampling and/or analytical procedure. Use additional worksheets if necessary. If MPC for a specific DQI vary within an analytical parameter, i.e., MPC are analyte-specific, then provide analyte-specific MPC on an additional worksheet. (Refer to *QAPP Manual* Sections 2.7.1 and 2.7.2 for guidance.)

Title:
Revision Number:
Revision Date:
Page ____ of ____

Measurement Performance Criteria Table

Medium/Matrix	
Analytical Parameter	
Concentration Level	

Sampling Procedure	Analytical Method/SOP	Data Quality Indicators (DQIs)[1]	Measurement Performance Criteria	QC Sample and/or Activity Used to Assess Measurement Performance	QC Sample Assesses Error for Sampling (S), Analytical (A) or both (S&A)

[1]**Data Quality Indicators (a.k.a. PARCC parameters, i.e., precision, accuracy/bias, sensitivity, data completeness, comparability)**

QAPP Worksheet #12a
Describe the project sampling design. Provide the rationale for selecting sample locations and sampling each medium/matrix for each analytical parameter and concentration level. (Refer to *QAPP Manual* Section 3.1.1.1 for guidance.)

Title:
Revision Number:
Revision Date:
Page ____ of ____

Sampling Design and Rationale

QAPP Worksheet #12b
List all site locations that will be sampled and include sample location ID number, if applicable. Specify medium/matrix and, if applicable, depth at which samples will be taken. Complete all required information, using additional worksheets if necessary. (Refer to *QAPP Manual* Section 3.1.1.1 for guidance.)

Title:
Revision Number:
Revision Date:
Page _____ of _____

Sampling Locations and Sampling and Analysis Method/SOP Requirements Table

Sampling Location[1,2]	Location ID Number	Medium/ Matrix	Depth (units)	Analytical Parameter	Concentration Level	Number of Samples (identify field duplicates and replicates)	Sampling SOP	Analytical Method/SOP	Sample Volume	Containers (number, size and type)	Preservation Requirements (chemical, temperature, light protected)	Maximum Holding Time (preparation/ analysis)

[1]**Indicate critical field sampling locations with "1".**
[2]**Indicate background sampling locations with "2".**

QAPP Worksheet #13
List all SOPs associated with sample collection. Include copies of all written SOPs as attachments to the QAPP. Sequentially number sampling SOP references with an "S" prefix in the Reference Number column. Use additional pages if necessary. The Reference Number can be used throughout the QAPP to refer to a specific SOP.
(Refer to *QAPP Manual* Sections 3.1.2.1-3.1.2.3 for guidance.)

Title:
Revision Number:
Revision Date:
Page _____ of _____

Project Sampling SOP Reference Table

Reference Number	Title, Revision Date and/or Number	Originating Organization	Equipment Identification	Modified for Project Work Y or N	Comments
S-1					
S-2					
S-3					
S-4					
S-5					
S-6					
S-7					
S-8					

QAPP Worksheet #14
Identify all field equipment and procedures that require calibration and provide the SOP reference number and person responsible for corrective action for each type of equipment. If frequency of calibration, acceptance criteria, and corrective action information is not included in an SOP, then document this information on the worksheet. (Refer to *QAPP Manual* Section 3.1.2.4 for guidance.)

Title:
Revision Number:
Revision Date:
Page_____ of _____

Field Sampling Equipment Calibration Table

Equipment	Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*

*** Specify appropriate reference letter/number from the Project Sampling SOP Reference Table (see QAPP Worksheet #13).**

QAPP Worksheet #15

Identify all field equipment and instruments (include analytical instruments on Worksheet #19) that require maintenance and provide the SOP reference number and person responsible for corrective action for each type of equipment. If frequency of calibration, acceptance criteria, and corrective action information is not included in an SOP, then document this information on the worksheet. (Refer to *QAPP Manual* Section 3.1.2.5 for guidance.)

Title:
Revision Number:
Revision Date:
Page_____ of _____

Field Equipment Maintenance, Testing, and Inspection Table

Sampling Equipment/ Instrument	Maintenance Activity	Testing Activity	Inspection Activity	Responsible Person	Frequency	Acceptance Criteria	Corrective Action	SOP Reference*

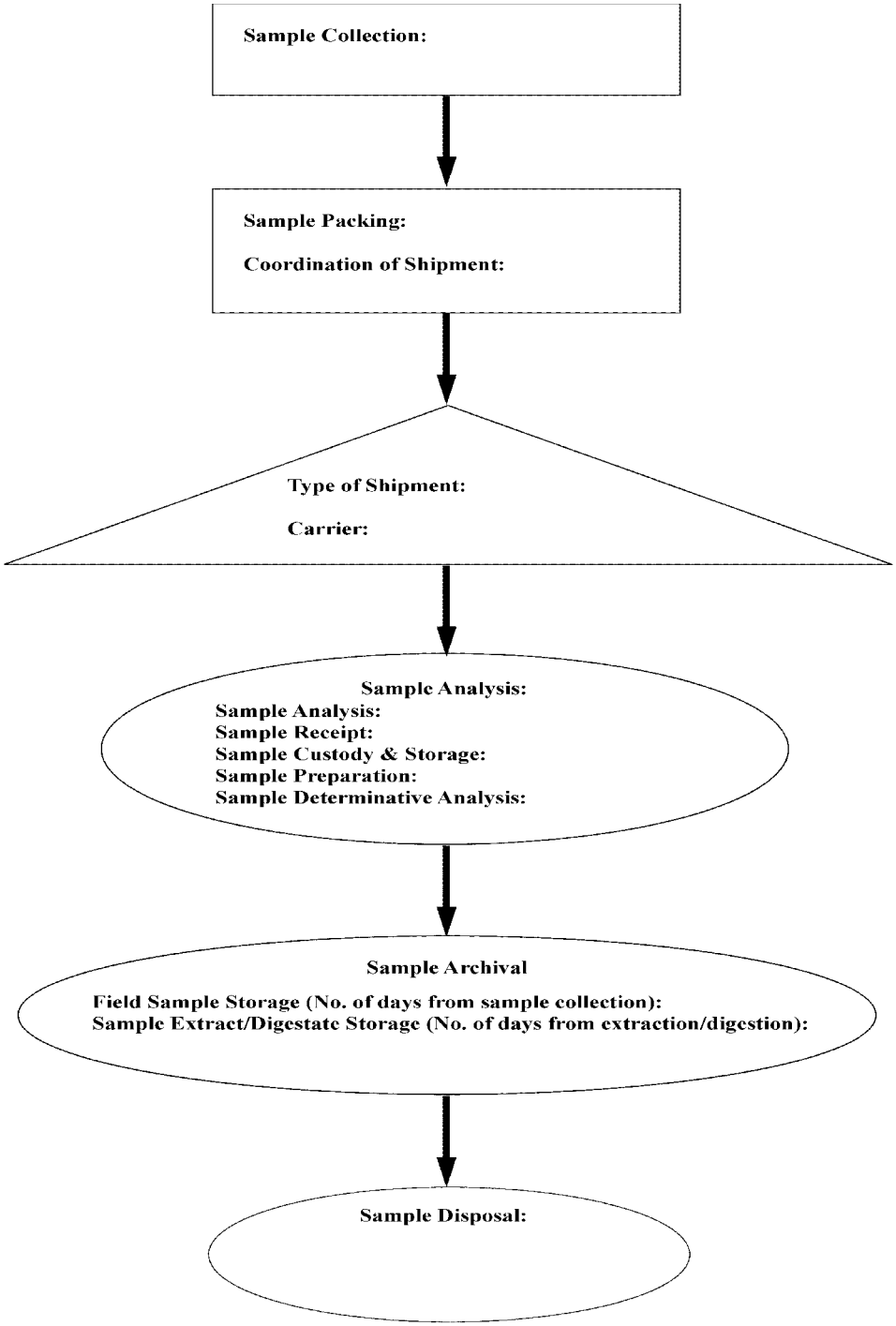
*** Specify appropriate reference letter/number from the Project Sampling SOP Reference Table (see QAPP Worksheet #13).**

QAPP Worksheet #16

Use this worksheet to develop a flow diagram describing the flow of samples. Record personnel, and their organizational affiliations, who are primarily responsible for ensuring proper handling, custody, and storage of field samples from the time of collection to laboratory delivery to final sample disposal. Indicate the number of days original field samples and their extracts/digestates will be archived prior to disposal. (Refer to *QAPP Manual* Section 3.1.3.2 for guidance.)

Title:
Revision Number:
Revision Date:
Page ___ of ___

Sample Handling Flow Diagram



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QAPP Worksheet #17

List all methods/SOPs that will be used to perform field analysis either directly in the field or in a mobile field laboratory. Indicate whether the method/procedure produces screening or definitive data. Sequentially number field analytical method/SOP references with an "F" prefix in the Reference Number column. Use additional pages if necessary. Include copies of all methods/SOPs as attachments to the QAPP. The reference number can be used throughout the QAPP to refer to a specific method/SOP. (Refer to *QAPP Manual* Sections 3.2.1.1 and 3.2.1.2 for guidance.)

Title:
Revision Number:
Revision Date:
Page_____ of _____

Field Analytical Method/SOP Reference Table

Reference Number	Title, Revision Date, and/or Number	Definitive or Screening Data	Originating Organization	Analytical Parameter	Instrument	Organization Performing Field Analysis	Modified for Project Work Y or N
F-1							
F-2							
F-3							
F-4							
F-5							
F-6							

QAPP Worksheet #18
Identify all field analytical instruments that require calibration and provide the required information for each. Use additional pages if necessary. If required information is included in an SOP, summarize relevant information on the worksheet and reference the appropriate SOP number. (Refer to *QAPP Manual* Section 3.2.1.3 for guidance.)

Title:
Revision Number:
Revision Date:
Page_____ of _____

Field Analytical Instrument Calibration Table

Instrument	Activity	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	Method/SOP Reference*

*** Specify appropriate reference letter/number from Field Analytical Method/SOP Reference Table (see QAPP Worksheet #17).**

QAPP Worksheet #19
Identify all field analytical instruments that require calibration and provide the required information for each. If required information is included in an SOP, summarize relevant information on the worksheet and reference the appropriate SOP number. (Refer to *QAPP Manual* Section 3.2.1.4 for guidance.)

Title:
Revision Number:
Revision Date:
Page_____ of _____

Field Analytical Instrument/Equipment Maintenance, Testing, and Inspection Table

Instrument	Maintenance Activity	Testing Activity	Inspection Activity	Frequency	Acceptance Criteria	Corrective Action	Responsible Person	Method/SOP Reference *

*** Specify appropriate reference letter/number from Field Analytical Method/SOP Reference Table (see QAPP Worksheet #17).**

QAPP Worksheet #20
List all methods/SOPs that will be used to perform analyses in fixed laboratories. Indicate whether method procedure produces definitive or screening data. Sequentially number fixed laboratory SOP references with an "L" prefix in the Reference Number column. Use additional pages if necessary. Include copies of all methods/SOPs as attachments to the QAPP or attach Laboratory QA Plans/Manuals for each laboratory that will provide analytical services and reference the appropriate sections in the project QAPP. The Reference Number can be used throughout the QAPP to refer to a specific method/SOP. (Refer to *QAPP Manual* Sections 3.2.2.1 and 3.2.2.2 for guidance.)

Title:
Revision Number:
Revision Date:
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Fixed Laboratory Analytical Method/SOP Reference Table

Reference Number	Fixed Laboratory Performing Analysis	Title, Revision Date, and/or Number	Definitive or Screening Data	Analytical Parameter	Instrument	Modified for Project Work Y or N
L-1						
L-2						
L-3						
L-4						
L-5						
L-6						
L-7						

QAPP Worksheet #21
Identify all fixed laboratory analytical instruments that require calibration and provide the required information for each. Use additional pages if necessary. If required information is included in an SOP, summarize relevant information on the worksheet and reference the appropriate SOP number. (Refer to *QAPP Manual* Section 3.2.2.3 for guidance.)

Title:
Revision Number:
Revision Date:
Page_____ of _____

Fixed Laboratory Instrument Maintenance and Calibration Table

Instrument	Activity	List Maintenance, Testing and Inspection Activities	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	Method/SOP Reference*

*** Specify appropriate reference letter/number from Fixed Laboratory Analytical Method/SOP Reference Table (see QAPP Worksheet #20).**

QAPP Worksheet #22a

Complete a separate worksheet for each sampling technique, medium/matrix, analytical parameter, and concentration level. If an analytical parameter has multiple analytes, list the overall field and analytical precision and accuracy/bias expected for each analyte when using the specified sampling and analytical technique. If method/SOP QC acceptance limits exceed the measurement performance criteria, then data may not meet user needs. (Refer to *QAPP Manual* Sections 3.3.1 and 3.3.1.1, and Table 4 for guidance.)

Title:
Revision Number:
Revision Date:
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Field Sampling QC Table

Sampling SOP*	
Medium/Matrix	
Analytical Parameter[1]	
Concentration Level	
Analytical Method/SOP Reference	
Sampler's Name	
Field Sampling Organization	
No. of Sample Locations	

Field QC:	**Frequency/Number**	**Method/SOP QC Acceptance Limits[2]**	**Corrective Action (CA)**	**Person(s) Responsible for CA**	**Data Quality Indicator (DQI)**	**Measurement Performance Criteria[3]**
Equipment Blanks/ Rinsate Blanks						
Bottle Blanks						
VOA Trip Blanks						
Cooler Temperature Blanks						
Field Duplicate Pairs						
Collocated Samples						
Field Splits						
PES sent to Laboratory						
Other:_____ _____						

QAPP Worksheet #22b
Complete this worksheet when an analytical parameter has multiple analytes. Describe the overall precision and accuracy/bias acceptance criteria for the sampling and analytical technique for all COCs and other target analytes. Identify the COCs with an "*". Use additional worksheet pages if necessary. (Refer to *QAPP Manual* Sections 3.3.1 and 3.3.1.1 for guidance.)

Title:
Revision Number:
Revision Date:
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Sampling SOP:
Analytical Method/SOP:

Field Sampling SOP Precision and Accuracy Table

Analyte	Field Precision	Field Accuracy/Bias (Contamination)

QAPP Worksheet #23a

Complete a separate worksheet for each medium/matrix, analytical parameter, and concentration level. If method/SOP QC acceptance limits exceed the measurement performance criteria, then data may not meet user needs. (Refer to *QAPP Manual* Sections 3.3.1 and 3.3.1.2, and Tables 3 and 4 for guidance.)

Title:
Revision Number:
Revision Date:
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Field Analytical QC Sample Table

Medium/Matrix	
Sampling SOP	
Analytical Parameter[1]	
Concentration Level	
Analytical Method/ SOP Reference*	
Field Analytical Organization	
No. of Sample Locations	

Laboratory QC:	**Frequency/Number**	**Method/SOP QC Acceptance Limits[2]**	**Corrective Action (CA)**	**Person(s) Responsible for CA**	**Data Quality Indicator (DQI)**	**Measurement Performance Criteria[3]**
Method Blank						
Reagent Blank						
Storage Blank						
Instrument Blank						
Laboratory Duplicate						
Laboratory Matrix Spike						
Matrix Spike Duplicates						
LCS						
LFB						
Surrogates						
Internal Standards (ISs)						
Other:_____						

QAPP Worksheet #23b
Complete this worksheet when an analytical parameter has multiple analytes. Describe the overall precision and accuracy/bias acceptance criteria for the analytical method/ SOP for all COCs and other target analytes. Identify the COCs with an "*". Use additional worksheet pages if necessary. (Refer to *QAPP Manual* Sections 3.3.1 and 3.3.1.2 for guidance.)

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Sampling SOP:
Analytical Method/SOP:

Field Analytical Method/SOP Precision and Accuracy Table

Analyte	Achievable Sensitivity/ Quantitation Limits	Field Analytical Precision	Field Analytical Accuracy/Bias

QAPP Worksheet #24a

Complete a separate worksheet for each medium/matrix, analytical parameter, and concentration level. If method/SOP QC acceptance limits[2] exceed the measurement performance criteria, then data may not meet user needs.
(Refer to *QAPP Manual* Sections 3.3.1 and 3.3.1.2, and Tables 3 and 4 for guidance.)

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Fixed Laboratory Analytical QC Sample Table

Medium/Matrix	
Sampling SOP	
Analytical Parameter	
Concentration Level	
Analytical Method/ SOP Reference	
Laboratory Name	
No. of Sample Locations	

Laboratory QC:	**Frequency/ Number**	**Method/SOP QC Acceptance Limits**	**Corrective Action (CA)**	**Person(s) Responsible for CA**	**Data Quality Indicator (DQI)**	**Measurement Performance Criteria**
Method Blank						
Reagent Blank						
Storage Blank						
Instrument Blank						
Laboratory Duplicate						
Laboratory Matrix Spike						
Matrix Spike Duplicates						
LCS						
LFB						
Surrogates						
Internal Standards (ISs)						
Other:_____ _____						

QAPP Worksheet #24b
Complete this worksheet when an analytical parameter has multiple analytes. Describe the overall precision and accuracy/bias acceptance criteria for the analytical method/ SOP for all COCs and other target analytes. Identify the COCs with an "*". Use additional worksheet pages if necessary. (Refer to *QAPP Manual* Sections 3.3.1 and 3.3.1.2 for guidance.)

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Sampling SOP:
Analytical Method/SOP:

Fixed Laboratory Method/SOP Precision and Accuracy Table

Analyte	Achievable Laboratory Sensitivity/ Quantitation Limits	Analytical Precision	Analytical Accuracy/Bias

QAPP Worksheet #25
Identify information and/or data generated/collected outside of the current data collection activity that will be used to make environmental decisions for the project. Specify how those acquired data/information will be used and the limitations on their use. These limitations include data quality considerations/problems as well as documentation completeness. (Refer to *QAPP Manual* Section 3.4.1 for guidance.)

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Non-Direct Measurements Criteria and Limitations Table

Non-Direct Measurement (Secondary Data)	Data Source (Originating Organization, Report Title and Date)	Data Generator(s) (Originating Org., Data Types, Data Generation/Collection Dates)	How Data Will Be Used	Limitations on Data Use

QAPP Worksheet #26
Identify the documents and records that will be generated for all aspects of the project. (Refer to *QAPP Manual* Section 3.5.1.1 for guidance.)

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Project Documents and Records Table

Sample Collection Records	Field Analysis Records	Fixed Laboratory Records	Data Assessment Records	Other _____

QAPP Worksheet #27a
Describe procedures for identifying and correcting any problems encountered during the project.
(Refer to *QAPP Manual* Sections 4.1-4.1.3 for guidance.)

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Assessment and Response Actions

QAPP Worksheet #27b
Identify the frequency, number and type of planned assessment activities that will be performed for the project. (Refer to *QAPP Manual* Sections 4.1-4.1.3 for guidance.)

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Project Assessment Table

Assessment Type	Frequency	Internal or External	Organization Performing Assessment	Person(s) Responsible for Performing Assessment, Title and Organizational Affiliation	Person(s) Responsible for Responding to Assessment Findings, Title and Organizational Affiliation	Person(s) Responsible for Identifying and Implementing Corrective Actions (CA), Title and Organizational Affiliation	Person(s) Responsible for Monitoring Effectiveness of CA, Title and Organizational Affiliation

QAPP Worksheet #28
Identify the frequency and type of planned QA Management Reports, the projected delivery date, the personnel responsible for report preparation, and the report recipients. (Refer to *QAPP Manual* Section 4.2 for guidance.)

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QA Management Reports Table

Type of Report	Frequency (daily, weekly monthly, quarterly, annually, etc.)	Projected Delivery Date(s)	Person(s) Responsible for Report Preparation, Title, and Organizational Affiliation	Report Recipients, Title, and Organizational Affiliation

QAPP Worksheet #29a
Describe the process for the collection, organization, and verification/validation of all information collected and generated throughout an environmental project. Include in the description how the results will be conveyed to the data user. Indicate, in the appropriate column, if the process is performed internally (I) or externally (E) to the data generator, and indicate who will be responsible for performing the task. (Refer to *QAPP Manual* Section 5.1.1 and 5.1.2 for guidance.)

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Figure 29a. Example: Data Verification/Validation Process Table

Verification/ Validation Task	Description	I/E	Responsible for Verification/ Validation (Name, Organization)

QAPP Worksheet #29b
List the criteria and data verifier/validator ultimately responsible for validation (by title and organizational affiliation) for each matrix, analytical parameter, and concentration level. (Refer to *QAPP Manual* Sections 5.1.1 and 5.1.2 for guidance.)

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Figure 29b. Example: Data Verification/Validation Summary Table

Medium/ Matrix	Analytical Parameter	Concentration Level	Verification/Validation Criteria	Data Verificator/Validator (Title and organizational affiliation)	Responsibility for Data Verification/Validation (Title and organizational affiliation)

QAPP Worksheet #30

Describe the scientific and statistical procedures/methods (not just definitions of DQIs) that will be used to determine whether data are of the right type, quality and quantity to support environmental decision-making for the project. Specifically describe how precision, accuracy/bias, representativeness, sensitivity (i.e., achievement of project Quantitation Limits), completeness and comparability data will be used to determine if project quality objectives were achieved. Describe how data quality issues will be addressed, and how limitations on the use of the data will be handled. (Refer to *QAPP Manual* Sections 2.7 and 5.2 for guidance.)

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Data Usability Assessment